

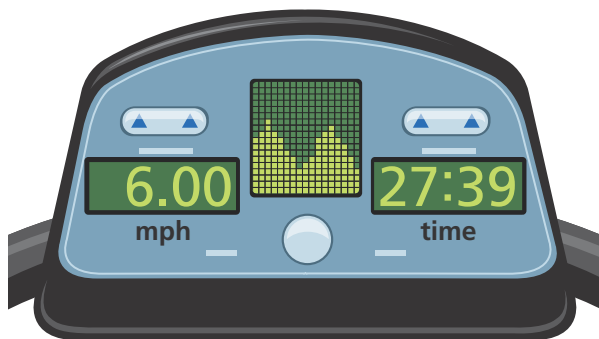


**UNDERSTAND**

- Use Structure** What could be a first step to solving the equation  $3x + -0.5(x + 3) + 4 = 14$ ? Explain.
- Make Sense and Persevere** The sum of four consecutive integers is  $-18$ . What is the greatest of these integers?
- Error Analysis** Describe and correct the error a student made when solving the equation  $4 = -2(x - 3)$ . What is the correct solution?

$4 = -2(x - 3)$   
 $4 = -2x - 6$   
 $4 + 6 = -2x - 6 + 6$   
 $10 = -2x$   
 $\frac{10}{-2} = \frac{-2x}{-2}$   
 $-5 = x$

- Communicate Precisely** Parker ran on a treadmill at a constant speed for the length of time shown. How many miles did Parker run? Explain.



- Reason** The Division Property of Equality says that for every real number  $a$ ,  $b$ , and  $c$ , if  $a = b$  and  $c \neq 0$ , then  $\frac{a}{c} = \frac{b}{c}$ . Why does the property state that  $c \neq 0$ ?
- Higher Order Thinking** Tonya's first step in solving the equation  $\frac{1}{2}(2y + 4) = -6$  is to use the Distributive Property on the left side of the equation. Deon's first step is to multiply each side by 2. Which of these methods will result in an equivalent equation? Explain.

**PRACTICE**

Solve each equation. SEE EXAMPLES 1 AND 2

- $-4x + 3x = 2$
- $7 = 5y - 13 - y$
- $7m - 4 - 9m - 36 = 0$
- $-2 = -5t + 10 + 2t$

Solve each equation. SEE EXAMPLES 3 AND 4

- $2(2x + 1) = 26$
- $-2(2z + 1) = 26$
- $92 = -4(2r - 5)$
- $10(5 - n) - 1 = 29$
- $-(7 - 2x) + 7 = -7$
- $200 = 16(6t - 3)$

Solve each equation. SEE EXAMPLE 5

- $\frac{1}{2}x + 2 = 1$
- $\frac{3}{2}x - \frac{2}{3}x = 2$
- $\frac{1}{5}(k - 3) = \frac{3}{4}$
- $\frac{7}{60} = \frac{5}{24}w + \frac{11}{12}$
- $\frac{3m}{4} - \frac{m}{12} = \frac{7}{8}$
- $1,290 = \frac{h}{10} + \frac{h}{5}$

Solve each equation.

- $0.1r - 1 = 0.65$
- $1.2n + 0.68 = 5$
- $0.025(q + 2) = 2.81$
- $-0.07p - 0.6 = 5$
- $1.037x + 0.02x + 25 = 30.285$
- $-0.85t - 0.85t - 3.9 = -8.15$
- A bee flies at 20 feet per second directly to a flowerbed from its hive. The bee stays at the flowerbed for 15 minutes, then flies directly back to the hive at 12 feet per second. It is away from the hive for a total of 20 minutes.

SEE EXAMPLE 5

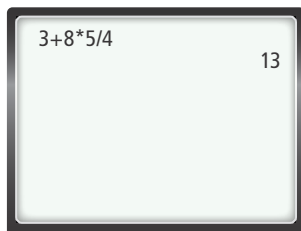
- What equation can you use to find the distance of the flowerbed from the hive?
- How far is the flowerbed from the hive?

**APPLY**

39. **Reason** A fastpitch softball player signs a six-year contract. Her agent expects that she will earn \$1,000,000 over the next six years. If the agent is right, how many bonus payments, on average, should the pitcher expect each year? Explain.



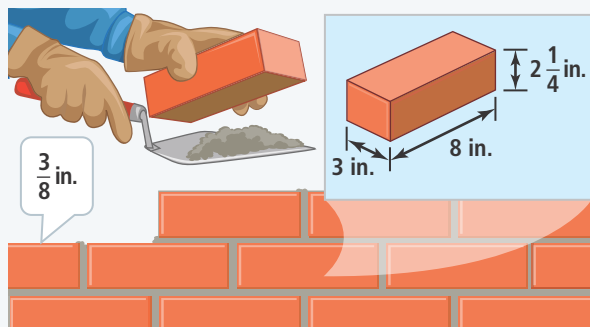
40. **Make Sense and Persevere** There are nine water bottles in Devin's refrigerator. He adds three full boxes of water bottles to the refrigerator. Then he adds two more boxes that each have 1 fewer bottle than a full box. When he is done, there are 67 bottles in the refrigerator. Write and solve an equation to find the number of bottles in a full box.
41. **Construct Arguments** Yuson used her calculator to solve the equation  $\frac{4}{5}x - 8 = 3$ . She entered the following on her screen and got an incorrect answer. How could she use parentheses to find the correct answer? Explain. What is the correct answer?



42. **Communicate Precisely** A scientist makes an acid solution by adding drops of acid to 1.2 L of water. The final volume of the acid solution is 1.202 L. Assuming the volume of each drop is 0.05 mL, how many drops were added to the water? About what percent of the solution is acid? Round to the nearest hundredth of a percent.

**ASSESSMENT PRACTICE**

43. Anna bought 8 tetras and 2 rainbow fish for her aquarium. The rainbow fish cost \$6 more than the tetras. She paid a total of \$37. Which of the following are true? Select all that apply.
- (A) The cost of 4 tetras is the same as the cost of a rainbow fish.
  - (B) One rainbow fish plus 5 tetras cost \$21.
  - (C) An equation to find the cost  $r$ , in dollars, of a rainbow fish is  $8r + 2(r + 6) = 37$
  - (D) Reducing the number of rainbow fish by 1 would result in a total cost of \$28.50.
  - (E) An equation to find the cost  $t$ , in dollars, of a tetra  $t$  is  $8t + 2t + 6 = 37$ .
44. **SAT/ACT** What is the solution of  $1,200 - 5(3x + 30) = 600$ ?
- (A) 30
  - (B) 50
  - (C) 150
  - (D) 200
  - (E) 250
45. **Performance Task** A mason will lay rows of bricks to build a wall. The mason will spread  $\frac{3}{8}$  inch of mortar on top of all but the last row of bricks. The finished wall will be  $1\frac{1}{8}$  inch less than 4 feet high.



**Part A** The mason wants to lay the bricks so that the shortest edge of each brick is vertical. How many rows of bricks are needed? Show your work.

**Part B** Suppose the mason decides to lay bricks so that the 3-inch edge is vertical. If the mason lays the same number of rows of bricks that were used for the wall described in Part A, how high will this wall be?